DRAFT

SITE CHARACTERIZATION REPORT

RT PROJECT NUMBER 2708-01

PREPARED BY:

RT ENVIRONMENTAL SERVICES, INC.
215 WEST CHURCH ROAD
KING OF PRUSSIA, PA 19406
(610) 265-1510

JUNE 2000

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TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

Page No.

FIGURES

APPENDICES

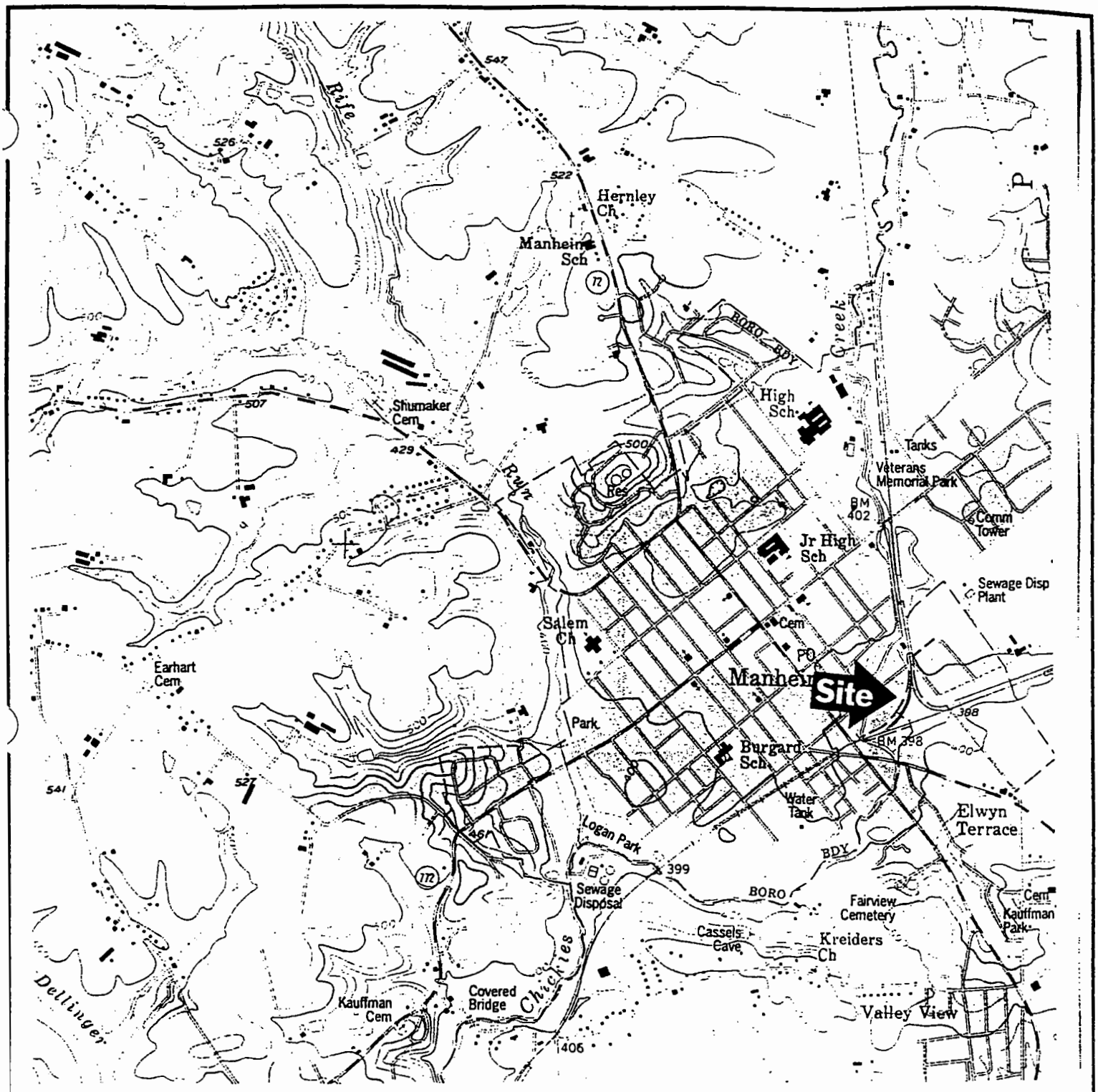
1.0 INTRODUCTION

This is a Site Characterization Report on the former Raymark Industries facility in Manheim Borough and Penn Township, PA. See Figure 1 for a Site Location Map. The facility, which was formerly involved in asbestos products manufacturing until 1997, continues to be used by tenants. Redevelopment and reuse of the facility for various future uses is planned.

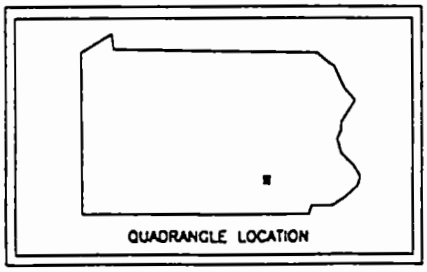
1.1 SITE DESCRIPTION

The facility is divided into a number of parcels totaling approximately 95 acres, and is divided by railroad property. A railroad "wye" is present in the center of the Lower Mill. The following parcels are present the facility:

Area	Comprises
Lower Mill Complex	Manufacturing, Lab, Warehouse, & Office Buildings
W. of Chiques Creek/ S. of Stiegel St.	Open Land/Flood Plain
Upper Mill Complex	Manufacturing & Warehouse Buildings
New Office Building	Office Building, Dynamometer Building & Parking
RCRA Landfill Area	Landfill, Open Land, Parking, Flood Plain
S. of Hostetter/ E. of Oak	Parking for Upper Mill & Agricultural Land



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC SERIES
MANHEIM, PA
PENNSYLVANIA QUADRANGLE
APPROXIMATE SCALE: 1 INCH = 2000 FT.



RT Environmental Services, Inc.
215 West Church Road
King of Prussia, PA 19406

FIGURE 1
SITE LOCATION MAP

Prepared For:

Phoenix Group, LLC
2600 Virginia Ave., N.W.
The Watergate – Suite 606
Washington, D.C. 20037

CHARGE 2708-01.SLM	AUTOCAD FILE 2708-01	ENGINEER	DESIGNER	DRAFTSPERSON CO
SCALE 1"=2000'	DRAWING NUMBER 2708-01.SLM			REVISION
DATE				

The site is being included in the Act 2 Pennsylvania Land Recycling Program and Raymark Industries plans to sell the facility to a redeveloper. The facility is a major historical manufacturing complex, which has its own landfill and continues to house various
tenants, who use the premises for car repair, storage, or manufacturing. A number of releases to soil and groundwater have been identified at the site, resulting from the historical manufacturing activities. Each of these have been investigated as part of the Year 2000 Land Recycling activities at the facility.

1.2 GEOLOGY

Based upon the Pennsylvania Atlas of Preliminary Geologic Quadrangles and the Geologic Map of Pennsylvania, the site is underlain by the Stonehenge formation which is an Ordovician-aged, medium-gray, medium-bedded to laminated, fossiliferous, oolitic limestone containing edgewise conglomerate. The topography of the site is relatively flat with an average elevation of 404 feet, a gradient of .019 ft/ft and relief of 16 feet across the site.

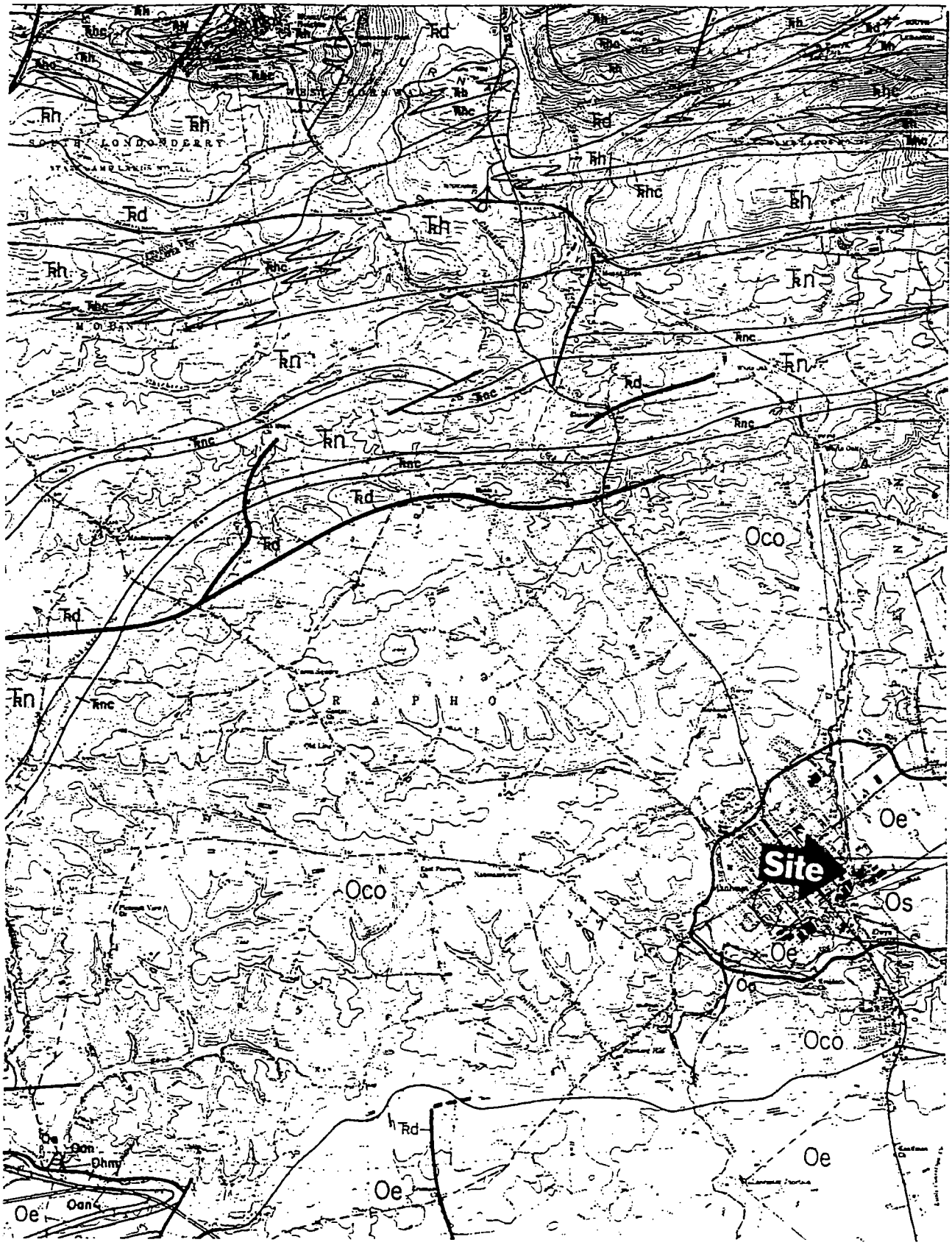
1.3 SITE HISTORY AND BACKGROUND

The site was the subject of a Phase 1 Environmental Site Evaluation in 1995 (See **Appendix 7**), as well as an evaluation by RT Environmental Services in 1996 for potential inclusion in the PA Land Recycling Program. The facility has been reinspected in March and April 2000, as part of the current Land Recycling activities at the site.

The following narrative summarizes the Phase 1 findings, as well as the Site Development History.

The site has been gradually developed since the early 1900's to its present state. Sanborn Maps dated 1912 (2), 1929, 1936 and 1943 were acquired and show the development of the site and uses of the facility. The Sanborn Maps are included in **Appendix 9**.

On the two Sanborn Maps dated 1912, the building that was once Building 10 is shown located adjacent to Building 65, and is owned by the Edison Electric Light Company. Buildings 1, 2, and 11 are also present and are owned by the United States Asbestos Company. There is a 10,000



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CHARGE	2708-001	AUTOCAD FILE	CHECKED	DESIGNED	DRAWN/EDITED
					CO
SCALE		DRAWING NUMBER			REVISION
DATE	6/7/00	2708-01			

RT Environmental Services, Inc.
215 West Church Road
King of Prussia, PA. 19406

FIGURE 2

GEOLOGIC MAP

gallon gasoline tank located between Building 2 and Chiques Creek. The portion of the property that is now occupied by Buildings 49, 64 and 77 is vacant farm land. The portion of the property that is now occupied by the paved storage area and RCRA landfill is occupied by a nursery with several greenhouses.

On the map dated 1929, the entire area that is now the lower portion of the site is developed to nearly its present state. This portion of the site is owned by the United States Asbestos Company. There are three additional storage tanks present near the previously mentioned 10,000 gasoline tank. The tanks are now covered by a building. The three additional tanks store oil, gasoline and benzol. The portion of the site now occupied by Building 58 is owned by Atlantic Refining Company. Two storage tanks for the storage of gasoline and oil are present. The building formerly owned by the Edison Electric Light Company is now owned by U.S. Asbestos Company. Buildings 36 and 37 are in their present locations in the upper portion of the site. These buildings are owned by Anchor Packing Company, a subsidiary of U.S. Asbestos Company.

The 1936/1943 Sanborn is similar to the 1929 map. Building 38 is now present on the upper portion of the site. There is an auto repair shop and junk yard present on the site now occupied by Building 12. The site presently known as the southern manufacturing area (previously owned by U.S. Asbestos Company) is now owned by United States Asbestos Division of Raybestos-Manhattan, Inc.

Chain-of-Title

A fifty year chain-of-title search was performed for the Raymark site. According to the title search, the site consists of ten parcels of land. The following is a list of past owners of the ten parcels. Assigned parcel numbers are not necessarily the actual parcel numbers in the town records.

Parcel 1

Prior to 1946	Clinton and Olive Fahnestock
1946	Charles E. McCoy
1947	Paul K. Kissinger
1950	Frank H. and Adeline White
1961	Raybestos-Manhattan, Inc.

Parcel 2

Prior to 1909	Jefferson and Sophie Keiffer
1909	The Atlantic Refining Company
1943	Raybestos-Manhattan, Inc.

Parcel 3

Prior to 1919	Samuel G. Keller
1919	William H. Royer
1934	Christian K. Kulp (Part)
1935	Christian K. Kulp (Part)
1942	Raybestos-Manhattan, Inc. (Part)
1950	Raybestos-Manhattan, Inc. (Part)

Parcel 4

Prior to 1922	Benjamin R. Hollinger
1922	Riley Heagy
1947	Annie and Elizabeth Heagy
1966	Raybestos-Manhattan, Inc.

Parcel 5

Prior to 1941	Harry B. Sheneberger
1941	Rufus and Ella Nissley
1960	Raybestos-Manhattan, Inc.

Parcel 6

Prior to 1916	James B. Busser
1916	Irvin Barto, George Seabold, Harry Witmyer
1939	Raymond and Emma Hollinger (Part)
1957	Raybestos-Manhattan, Inc. (Part)
1968	Raybestos-Manhattan, Inc. (Part)

Parcel 7

Prior to 1930	Cephas and Emma Hostetter
1930	Elmer G. Brubaker (Part)
1936	Elmer G. Brubaker (Part)
1942	Raybestos-Manhattan, Inc.
1947	Raybestos-Manhattan, Inc. (Part)
1956	Raybestos-Manhattan, Inc. (Part)

Parcel 8

Prior to 1930	John B. Kready
1930	John K. Weaver
1940	Raybestos-Manhattan, Inc. (Part)
1945	Benjamin and Clara Herr (Part)
1946	Raybestos-Manhattan, Inc.

Parcel 9

Prior to 1936	J. Hershey and E. Hershey
1936	George H. Scull
1944	Besse A. Scull
1947	Raybestos-Manhattan, Inc.
Prior to 1945	Jacob G. Hershey
1945	J. Charles Hershey
1969	Raybestos-Manhattan, Inc.

Parcel 10

Prior to 1951	Lawrence L. Boyd
1951	Lillian F. Boyd
1954	Raybestos-Manhattan, Inc.

Interviews

In order to gain knowledge of the historical environmental conditions at the Raymark site, ELI[1] conducted an interview with the former representative of BCM, an environmental consultant to Raymark that performed several environmental projects at the site. In addition, during the site reconnaissance, interviews were held with several Raymark employees.

On April 5, 1995, ELI conducted a personal interview with Bill Fleming of Fleming and Blair, formerly Senior Vice President of BCM. In his previous role at BCM, Mr. Fleming was responsible for all BCM environmental activities conducted by the firm at the Manheim facility. Considering his past involvement with the site, he was a good candidate to supplement information gathered from other sources, as well as to provide insight into some of the decisions that were made during the environmental work performed at the site.

Mr. Fleming provided copies of correspondence and reports related to the Landfill Closure Plan, quarterly sampling of monitoring wells, and Doe Run investigations. The information provided by Mr. Fleming was used to supplement other information gathered during the file reviews and site reconnaissance.

At the time of ELI's site reconnaissance, seven Raymark employees were interviewed. In general, the Raymark employees were very knowledgeable of the specific manufacturing processes which they were involved with at the facility. However, the employees typically only worked on one specific process, usually within one building. Therefore, they may not have had any knowledge of other processes or occurrences in other buildings. Thus, the data collected on environmental conditions (i.e. spills, leaks, etc.) is limited. The following is a list of Raymark employees that were interviewed:

Tonya Barnhart	Herman Ramig
Donald Geib	Carl Sachs
Bruce Keller	Jamieson Showers
Raymong Keuper	

[1]ELI - Environmental Laboratories Inc., who conducted the Phase 1 in 1995.

On March 30, 1995, ELI interviewed Tonya Barnhart concerning a ruptured 275 gallon aboveground storage tank (AST) located in Building 36, which was used to store phenolic/toluene (saturant). Ms. Barnhart indicated that this AST was used in conjunction with the hand treating tank. The AST was used to temporarily store the saturant during the dripping process which was transferred from the mixing room. The AST clogged and ruptured spilling the phenolic/toluene resin contents into the wall, floor and metal stand (the remains of the spill are still present). This rupture occurred pre-1987. Since 1987, the saturant is transferred directly to the hand treating tank.

On March 29, 1995, ELI interviewed Donald Geib who has been a Raymark employee since 1962. Prior to 1960, old boilers were installed (around the 1940's) and were located in front of the sheeters. In the 1960's, Building 2 was used for the manufacturing of clutch facings and roll brake linings on the lower level, and wick and rope were made on the second floor. During the 1960's and 1970's, Building F19 was used for woven roll linings and woven processes. Building F19 was later removed. This area is the current location of several underground storage tanks (USTs) including Tank Nos. 001, 002, 015, 016 and 017. During the 1960's and 1970's, Building F19 as also used for the mixing of saturants (now performed in Building 36) including phenolic resin, SO5-toluene and MEK. An alcohol and phenolic resin was used in Building P3. In 1972, the main office was constructed. In 1978, the on-site landfill was closed. Mr. Geib indicated that the sludge disposal of in the landfill contained very little liquid. The sludge went through a drying or liquid removal process prior to disposal in the landfill. First, the drydust was wetted with water which was recycled. The heavier material dropped to the bottom of the collection system as a sludge. This sludge was scraped from the bottom and placed into holding containers. Once the containers were full, they were loaded into trucks and transported to the landfill for disposal. This process was ceased with the close of the landfill and the dust was automatically bagged at baghouses.

On March 28, 1995, ELI interviewed Mr. Bruce Keefer who acted as the Raymark representative while ELI inspected the facility. The information collected related to prior use and discharge locations, and the inspection of buildings. This information has been incorporated into Section 4.0. On March 30, 1995, more specific questions were discussed with Mr. Keefer related to environmental issues identified during our site reconnaissance. The two USTs marked abandoned on Raymark's Drawing Number D-3889 were used to store Thinner No. 1 (SO5-toluene). These tanks may have been removed at the time when Buildings 35 and 40 were demolished. Sanborn

maps indicated the presence of USTs and ASTs adjacent to Building 2 located in the lower facility adjacent to Chiques Creek. Mr. Keefer hd no knowledge of these tanks. Also, four ASTs were once located in the same vicinity and west of Chiques Creek. At present, two of these ASTs remain and are seated in concrete cradles. These two ASTs are marked 001A and 002A. The other two tanks floated away on June 22, 1972 during the flood associated with Hurricane Agnes.

The non-contact cooling water discharge from Raymark was discussed in relation to their stormwater permit. Mr. Keefer indicated that the data was routinely collected either by himself or Mr. Barry Landers at the permitted locations. This data is typically summarized on the PADER required forms and submitted by Mr. Jamieson Showers.

Mr. Keefer also indicated that the three existing water supply wells (nos. 1, 2 and 3) were interconnected to a larger regional subterranean water supply which he described as flowing beneath Raymark, the Krieder property and Little Spring Park. He also noted that when USTs were installed at Buildings 12 and 73, bedrock had to be excavated, and that when the bedrock was broken, groundwater flowed under artesian conditions. In addition, he said that during the construction of the boiler house (Building 56), the foundation was set into bedrock, and that this operation required four to six inch discharge pipes to de-water the excavation due to artesian groundwater conditions.

Mr. Keefer also discussed the process of solvent recovery. He said that the solvent is steamed and the resultant LNAPL flows through a weir structure into a toluene recovery tank (a UST). The product is stored in this tank and then reused. The dissolved fraction is treated by an air stripping tower. The treated water is discharged to the municipal sanitary sewer system. Mr. Keefer said that the discharge is not required to be monitored by Raymark; however, solvent odors are monitored at Manheim's treatment plant. The solvent recovery tank is monitored daily for levels and grab samples are collected. The USTs undergo yearly tank tightness tests. The solvent recovery system consisted of a carbon absorption system with steam stripping of the solvent from the carbon. The solvent is then decanted from the water/solvent mixture held in the storage tank.

On March 29, 1995, Mr. Raymond Keuper was interviewed. Mr. Keuper indicated that litharge (lead) was used heavily in the manufacturing process prior to eight years ago. Five to eight years ago, litharge was used lightly in the manufacturing process and, as of five years ago, it was not

He indicated that fly ash may have been disposed of at the landfill, and that the greatest potential for spills would be near solvent recovery (where the heptane is loaded) and possibly the compressor room. He was not aware of any buried drums.

On March 30, 1995, Mr. Carl Sachs was interviewed. Mr. Sachs provided more of a historical perspective which included:

- He was not aware of USTs.
- Building F20 (Building 2) was used as a maintenance paint shop, and contained two kettles for resins until the early 1950's. He did not know what happended to bad resin batches. This building was removed.
- A poly-resin made of high tung oil mix was used in 1969.
- Two resins were used to treat yarn. The resin supplier was Bakerlite. This resin was baked for flexibility.
- Building 1 hd asbestos twisters/speeders on the first and second floors.
- Department P3 contained textile fiber carting machine cards that were used to prepare fibers.
- The rubber mix/resin and asbestos paper was treated in towers located in Department P3 (Building 16).
- He was aware of oven fires in 1979 and 1980.
- The landfill area was used by Raymark fire fighters to practice extinguishing fires. The fire fighters would first start solvent and pallet fires and then they would practice extinguishing these fires.
- The floors of the weaving area in Building 38 always appeared to be oily as long as eight to ten years ago. Mr. Sachs indicated that the weavers used large quantities of oil which

dripped onto the floor. This oil kept the dust down. When the floors became too slippery, they were cleaned and the oil was removed. However, Mr. Sachs did not know where the oil and oily material was disposed.

- Building 36 contained a former "packing" manufacturing area where a mixture of wax-oil graphite flakes was used.

- The rear portion of Building 56 (currently Building 73) was used for the adhesive process.

- Mr. Sachs indicated that much of the lower facility was flooded in the 1972 flood and that two ASTs floated away.

On March 30, 1992, ELI interviewed Mr. Jamieson Showers. Mr. Showers indicated that during a tank tightness test on the solvent recovery tanks, a leak was detected in the plumbing, not the tank itself. Raymark hired Kim Engineering of Massachusetts to conduct environmental testing and GemChem to conduct test borings in Building 38. The data obtained from this testing indicated that a release had occurred. Mr. Showers indicated that all on-site floor drains were concreted in the 1970's. An on-site septic system is used for the guard shack only and he was not aware of any old septic systems in other areas of the site. An overflow tank constructed of brick block (located behind Building 74) is used as an overflow holding tank for the hydraulic oil associated with the water system (with synthetic additives) behind the compressor room. He indicated that the stains on the soil were related to this tank and that the tank held mostly water with little oil/grease. This liquid is pumped to the sanitary sewer. Tank No. 12 at Building 72 is strapped down due to high groundwater conditions and buoyancy; however, the tank behind Building 74 is not.

On March 28, 1994, Mr. Showers was also interviewed related to regulatory issues. Raymark had permits associated with SARA III, UST regulations and NPDES. The off-spec waste was disposed at the Lancaster County Solid Waste Management facility. The baghouse waste goes to a TSDF in West Chester, Pennsylvania. All non-hazardous waste went to Remtech Environmental in Lewisberry, Pennsylvania (Permit #PAD667098822).

Solvents as of 1996, were collected by Safety Kleen (ID #NJD002182892). From the coal buring process, fly ash is processed on a wet basis and the sludge is decanted. The residual waste from

bottom ash was recycled through the coal suppliers, Pine Creek Coal Company.

Stormwater Management

As of 1996, Raymark was under a National Pollutant Discharge Elimination System (NPDES) which required that stormwater and cooling water discharges be monitored. The permit (Permit No. 0008559) expired in November 1993 and may have been reviewed after that.

The NPDES Permit required that twelve stormwater outfalls (designated Outfalls 001 through 012) be monitored for various parameters. Raymark monitored all of the outfalls for flow and pH. Raymark sampled only Outfalls 004 and 005. Outfall 004 was sampled for oil and grease. Outfall 005 was sampled for 2-chlorophenol and 2-nitrophenol.

Raymark also monitored Chiques Creek daily and Doe Run Creek biweekly for temperature changes as the creeks flow past the site.

1995 SITE RECONNAISSANCE

ELI conducted a site walkover/reconnaissance of the property from March 28-30, 1995 in order to evaluate the environmental conditions at the site. The site reconnaissance included the assessment of the property for spills, releases, storage practices and discharges. In addition, interviews were conducted with Raymark employees to gain a historical perspective of past operations, processes and occurrences at the site. These interviews were discussed previously.

Site Structures

The facility can be divided into two main manufacturing areas based upon age and geography. Northeast of Oak Road is described as the Upper Mill facility and consists of approximately eleven buildings, many interconnected. These buildings are newer in age and typically have the greatest square footage per building. This area is comprised of approximately twenty-five acres. Southwest of Oak Road is defined as the Lower Mill facility and consists of the oldest buildings. This area contains approximately forty-four buildings and is comprise of approximately ten acres. The tables describe the structures on the Lower Mill facility and the Upper Mill facility, respectively. The 1995 or historical usages associated with the buildings are also listed in these tables.

LOWER MILL FACILITY STRUCTURES			
Building Number	**Approximate Date Constructed**	**Number Stories**	**Typical 1995 or Historical Usage**
1	1912	2	formerly: carding, spinning and weaving departments, speeder twisters, inventory storage, pressing and molding. Currently not in use.
2	1912	2	formerly: 1912-sheet packing, rubber mixing, asbestos packing, weaving basket and shipping; 1929± sheeting asbestos, impregnating, rubber mixing, gasket making, mixing and drying; 1936/43±, various manufacturing and staging operations; 1955 not in use.
3	1939	3	formerly: 1912 not present; 1929± and 1936± preparing building; currently dead storage (motors, mill supplies), third floor was maintenance, old machines, second floor has Wheelabrators.

LOWER MILL FACILITY STRUCTURES			
Building Number	**Approximate Date Constructed**	**Number Stories**	**Typical 1995 or Historical Usage**
4	1929	--	formerly: coal shed, currently laboratory/office.
5	1929	--	formerly: a hand fed coal fired boiler to 1950's; currently old drying ovens present (#1 operational, #2 not operational); also used as compressor rooms.
6	1929	--	present as small guard house.
7	1929	2	formerly: office building (1929± and 1936/43) in 1936/43±; the southerly portion was converted into laboratory testing room; currently not used.
8	--	--	formerly: compressor shed adjacent to boiler.
9	1929	2	formerly: staging of crude asbestos 1929/1936/43; currently first floor has raw material storage in bags and second floor is empty.

10	1929	1	formerly: staging of old machinery; currently building was removed and land transferred to Agway retailer.
11	1912	1	formerly: 1912 gaskets manufacturing, carding room and machine shop, on the first floor; weaving on the second floor, and a small office; 1929 through 1943 high pressure packing, clutch manufacturing, machine shop, box making and packing and shipping; also after 1943 was used for sheeters and solvent recovery in southwest end.
12	1929	1	formerly: hydraulic presses; currently leased to car polishing and degreasing business; all degreasing material goes to UST and hauled off-site.
13	1929	1	formerly: hose reel house; currently removed
14	1929		initially attached to Building 34 used for staging of finished product; later referred to as Building 34.
16	1929	2	attached to Building 3; formerly used for weaving; currently used for dead storage of motors and mill supplies.
17	1929	1	asbestos storage; currently not used.
19	1929	2	attached to Building 9; formerly used for storage of finished stock; currently used for storage see Building 9.
20	--	--	water tower (not used).

LOWER MILL FACILITY STRUCTURES			
Building Number	**Approximate Date Constructed**	**Number Stories**	**Typical 1995 or Historical Usage**
21	1929	1	attached to Building 5; formerly storage; older Sanborn Maps ID Building 21 as current Building 51 which was the electric room with transformers; no transformers are currently present.
22	1929	1	referred to as 21 on current plans and attached to Building 5; this building was used for storage.
23/24	1929	1	formerly: clutch ring department; also used 1936/43 for baking and treating (2 ovens were present); currently removed.
25	1929	2	part of Building 1 southern end.
27	1929	1	attached to Building 10 formerly used for raw material; building no longer present.

28	1929	1	referred to as the club.
30	1929	1	formerly: part of clutch (Buildings 23 and 24); currently removed.
31	1929	1	formerly: drying room.
32	1929	1	formerly: 1929± saturating room; 1936/43± cloth-treating room added.
33	1929	1	formerly: 1929± baking room; 1936/43 baking room with 2 ovens.
34	1929	1	formerly: staging (1989); and finishing room 1936/43; currently leased to machine shop and pizza shop.
35	1929	1	formerly: gibsonite grinding and mixing; currently removed.
40	1936/43	1	formerly: impregnating room; currently removed.
41	1036/43	1	in former location of Building 1B used for resin cooking; currently removed.
44	post-1936/43	1	used for testing garage.
45/53	post-1936/43		unknown former use.

LOWER MILL FACILITY STRUCTURES			
Building Number	**Approximate Date Constructed**	**Number Stories**	**Typical 1995 or Historical Usage**
49	post-1936/43	1	current R&D testing equipment, rebuild clutches; present transmission oil drums and Safety Kleen self contained solvent wash
51	1929	2	referred to previously as Building 21, transformer room/electric room.
55	1929	2	office current and past.
58	post-1936/43	4	new boiler house, coal fired.
64	post-1936/43	1	well pump house #1.
65	post-1936/43	1	attached to Building 12 leased.
77	post-1936/43	2	office building (current/past).

UPPER MILL FACILITY STRUCTURES			
Building Number	**Approximate Date Constructed**	**Number Stories**	**Typical 1995 or Historical Usage**
36	1929±	1	formerly: extgrs distribution; currently used for loaming operation, instrumental calibration shop, storage and finishing, mixing for impregnation, impregnation of fabric, four drying ovens.
37	1929±	1	formerly: boiler house; currently building was added and includes offices, rubber making process (rubber overflow drums)m clutch facing impregnation.
38	1936/43	1	formerly: was compounding room, rubber coating; also weaving room (currently weaves storage) emulsion room.
39	post-1936/43	1	currently: used for supplies, storage and finishing, drying/aging, two 55 gallon lubricant oil drums.
43/48	post-1936/43	--	solvent recovery area.
47	post-1936/43	--	building attached to 38.
50/52/ 57/61	post-1936/43	--	former building removed, currently concrete pad.

UPPER MILL FACILITY STRUCTURES			
Building Number	**Approximate Date Constructed**	**Number Stories**	**Typical 1995 or Historical Usage**
54	post-1936/43	--	transformers.
56	post-1936/43	1	cutting, curing, die cast machinery.
66	post-1936/43	1	unknown small building.
67	post-1936/43	1	currently: 3 gas ovens. machining, drill presses. cutting to size, sanding baking. mold mixing injection molding machines.
N of 67	post-1936/43	--	hazardous waste storage shed.
70	post-1936/43	1	8 steam/oil fired ovens, hot presses, molded formed, drilled baked, material storage.
73	post-1936/43	1	grinder/screener, dust collector, rubber tape. pre-forms waxened, storage. pipe shop.

74	post-1936/43	1	13 curing ovens (gas), 1 gas incinerator (1400^0), future shipping, hot presses, compressor room.

Electrical Transformers and Generators

There are several transformers located on-site which have been transferred to the non-PCB type according to Mr. Herman Ramig. They are located northwest of Building 73, northeast of Building 54 and northeast of Building 70. Electrical lines are overhead or underground with electric manhole access ways. All known transformers (or areas near transformers) were tested for PCBs as part of the Year 2000 Site Characterization Program.

Air Emissions

There were historically point source air emissions at various points throughout the facility. There were permitted emission points and fugitive dust and indoor air emissions. A detailed description of these air emission points is presented later.

Asbestos

Asbestos is present at the facility in asbestos containing materials (ACM), as well as in raw product form.

The age of the buildings, 1910 through the late 1970's, would indicate that asbestos materials would have been typically used as part of the construction (i.e. roofing material, etc.) for that time period. The process itself used raw asbestos in the old product and was used in specialty products through 1997. All raw asbestos was contained in bags and was not observed loose except in the weaving machines. Some ACM is curretnly observed to be in poor condition. A detailed asbestos survey for ACM has been completed for the facility.

Aboveground and Underground Storage Tanks

The site contained both aboveground and underground storage tanks (ASTs and USTs) at various locations in both the upper facility and the lower facility. All of these tanks were either removed or closed in place as part of the Year 2000 Land Recycling activities. The list of tanks is as follows:

ON-SITE UNREGISTERED TANKS				
Tank Number	**Location**	**Capacity (gallons)**	**Substance Stored/Status**	**Type**
014	NW of Bldg 77	1,500	No. 2 fuel oil/active	UST
015	NE of Bldg 16	1,000	formerly ESCO/unknown	UST
016	NE of Bldg 16	unknown	formerly/abandoned without records	UST
017	NE of Bldg 16	unknown	formerly/abandoned without records	UST
018	NW of Bldg 2	1,000	1912 plan ID as gasol	UST
019	NW of Bldg 2	13,000	1929 plan ID UST as GT (same location of 1912 No. 18)	UST
020	NW of Bldg 2	12,500	1929 plan ID UST as oil tank	UST

Additional information on releases found during the tank closure activities can be found in Section 2.0. Tank closure information can be found in **Appendix 11**.

Effluent Discharge

Non-contact cooling water and stormwater was historically discharged through twelve discharge points. These discharge points were permitted with PADER under NPDES Permit No. 0008559 and were monitored at regular intervals by Raymark personnel. All monitoring results are logged on the appropriate forms and submitted to PADER.

Mr. Showers indicated that all floor drains were sealed with concrete in the 1970's. Visual observation did not indicate the presence of active floor drains. Several trenches with metal covers were noted but they were not drains according to Mr. Keefer.

Surface Water

Two creeks abut the property. Doe Run Creek is located northeast of the facility buildings. Chiques Creek is located west of the facility building. Doe Run Creek flows into Chiques Creek southeast of Building 11.

Contaminated Soils, Spills and Releases

The site reconnaissance and interviews indicate that spills and releases have occurred at the Raymark facility. These are summarized below:

- Tank tightness testing indicated that the piping system of a 12,000 gallon toluene/heptane tank (Tank No. 006) failed. This was confirmed by interviews with employees. Raymark had testing performed to evaluate the release, but the findings of these tests were not available.

- Interviews indicate that oils leaked onto floors and were not cleaned up immediately.

- The age of the non-registered and registered tanks would indicate that the life expectancies of many of these steel tanks were exceeded. If these tanks were not emptied prior to abandonment, then the potential exists for a release.

- A soil stained area was observed at the northeast end of Building 74. This appears to be associated with a holding tank (water and lubricant oil) which may have been overfilled, and an aboveground storage tank containing #2 fuel oil.

- Fly ash was disposed of on the landfill cap and was observed to be present within other construction debris (north of landfill along unpaved access way).

Groundwater

During interviews with Raymark employees, three existing water supply wells (Nos. 1, 2 and 3) were identified on the site. The locations of these wells are shown on **Figure 3**. Water from these wells was historically used for non-contact cooling purposes.

Several groundwater monitoring wells were observed in and around the landfill on the site. These wells are sampled as part of a groundwater monitoring program under the RCRA Landfill Closure Plan.

Adjacent and Surrounding Properties

Adjacent land use consists of downtown Manheim (to the west) and farm land or vacant land.

SITE REGULATORY RECORDS

Air Permits

Information on air permits was obtained at the Raymark site. This information indicated that the Raymark facility had thirteen air permits on file with PADEP as of 1995. These permits are summarized below.

INSERT FIGURE 3

HISTORICAL AIR PERMITS		
Permit	**Permit No.**	**Comments**
Fabric Coating (Alt. Emissions Reduction Bubble Permit	36-326-001	In renewal process. Application submitted to PADER in February 1994.
Clutch Facing Operations	36-309-091C	Modified 8/19/94. Civil Consent Order (3/4/94) for unapproved installation of a 4,800 cfm AAF fabric collector as control for the mixing preparation area. $1,000 fine.
Five Sheeter Lining Machining Operations	36-319-032	---
Eight Cop Winders	36-319-035	---
Brake Lining Finishing Operation	36-319-031B	---
Dry Process Operation	36-319-009B	Permit is accompanied by PADER Plan Approval Determination Request dated 7/2/93, stating that the source is exempt from plan approval and permitting requirements.
Mixing, Grinding, Molding and Finishing Operations	36-319-001D	---
Four Sheeter Mills	36-318-122A	---
Pull Yarn Treating Tower	36-318-110B	---
Twelve Clutch Facing Baking Oven	36-309-092	Notice of Violation dated 12/5/94 against Universal Friction Composites for failure to operate system incinerator (air pollution control device) during oven operation. UFC responded on 12/22/94 with letter to PADER stating that better management practices will be implemented to insure future compliance.
Three Coal Fired Boilers and Associated Ash Handling System	36-302-058A	---
Scrap Pulverization System	36-309-089	---
Crusher and Extruder	36-309-090	---

VOC Emissions

A Volatile Organic Compound (VOC) Reasonably Available Control Technology (RACT) proposal dated December 1994 was prepared by Spotts, Stevens and McCoy, Inc. for Universal Friction Composites (UFC)** in response to federal regulations. These air emissions no longer occur as UFC is no longer in business.

Toxic Chemical Release Inventory Reporting

Under Section 3013, Title III of the Superfund Amendments and Reauthorization Act (SARA), Raymark Friction Company reported the release of seven chemicals on EPA Form R, Toxic Chemical Release Inventory Reporting Forms dated June 22, 1994. The seven chemicals and total reported releases as of 1996 are summarized below:

CHEMICAL RELEASES		
Chemical Name	**Fugitive or Non-point Air Emissions (lbs/yr)**	**Stack or Point Air Emissions (lbs/yr)**
Phenol	3,100	13,600
Toluene	200,000	450,000
Xylene (mixed isomer)	500-999	18,600
Copper	11-499	11-499
Asbestos 9 (friable)	1-10	11-499
Barium Compounds	11-499	500-999
Zinc Compounds		

The facility's Toxic Release Inventory (TRI) ID No. was 17545RYMRK123ES.

**UFC was a tenant successor who continued to operate portions of the former Raymark Manufacturing operations.

Waste

Raymark records indicate that hazardous materials are generated on-site and shipped off-site as hazardous waste. Quarterly hazardous waste reports are due to PADER each quarter. According to Raymark site personnel in 1996, quarterly reports have been filed every quarter with no significant changes to the June 30, 1993 report. More detailed information on hazardous waste is discussed in Section 7.2.2.

The facility had two landfills, one a RCRA Subtitle C landfill which is in the Post Closure Care period. This landfill is capped and is monitored as required by the Closure Plan. Post Closure Care funds are set aside as required by RCRA regulations. Waste in the landfill is TCLP-hazardous for lead; this waste also contains asbestos.

An older landfill at the site, to the southeast of the Lower Mill contains the same material; this material constitutes soil-like historical fill, as it was placed prior to 1978. This area is mostly covered; only minor areas of deficient cover are noted. The fill appears to extend past the parcel property lines.

Drummed and bagged wastes are present in many of the former manufacturing buildings. These wastes need to be properly characterized and removed from the site.

Historical waste streams generated by the facility included:

- Processing scrap and off-spec product from manufacture of friction materials
- Waste yarn and cloth from processing and cleaning
- Piping, scrap steel, etc. from maintenance activities
- Empty fifty-five gallon steel drums
- Office/computer paper and cardboard
- Bottom ash from coal fired steam generation
- Fiy ash from coal fired steam generation
- Waste hydraulic fluid
- Off-spec water based resin and latex

- 5% synthetic oil/95% water mixture
- Baghouse dust from machining of friction materials
- Waste asbestos, asbestos products, and baghouse dust containing asbestos
- Grindings, shavings, etc. from on-site machine shop

FEDERAL REGULATORY RECORDS

Environmental Database Search

An environmental database search was obtained to gather information from federal databases. The electronic data search maps all the sites with potential or existing environmental liabilities. Federal databases were searched in accordance with ASTM Standard, E-1527, latest issue. A copy of the electronic data search is included in **Appendix 10**.

National Priorities List (NPL)

The NPL is the EPA's list of the most serious, uncontrolled or abandoned hazardous waste sites identified for possible long term remedial action under Superfund.

The site is not on the NPL. In addition, no NPL sites have been found within the search radius of the site.

Comprehensive Environmental Response Compensation & Liability Index System (CERCLIS)

The CERCLIS List is a compilation of sites currently under investigation by the EPA for a release or threatened release of hazardous substances.

Two sites were found within a one mile radius of the site. These two sites were identified as the Raymark property. These sites are listed below:

Names and Address	EPA ID #	Plot #/Letter
Raybestos-Manhattan, Inc. - Lagoon Building #70A Hostetter Road Manheim, Pennsylvania	PAD980539241	1
Raybestos-Manhattan Chiques Creek and Doe Run Creek Manheim, Pennsylvania	PAD003015328	A

The RCRA program identifies and tracks hazardous waste from the point of generation to the point of disposal.

Ten RCRA sites were found within a ½ mile radius of the site. The Raymark site is included on this list as a Large Quantity Hazardous Waste Generator and a Treatment/Storage/Disposal Facility.

Name and Address

Raybestos-Manhattan
Chiques Creek and Doe Run Creek
Manheim, Pennsylvania

Frank M. Fairs Auto Body
135 South Oak Street
Manheim, Pennsylvania

Milton Fabrics, Inc.
123 S. Hazel Street
Manheim, Pennsylvania

Sauder Chevrolet
350 S. Main Street
Manheim, Pennsylvania

Sunoco Service Station
315 S. Main Street
Manheim, Pennsylvania

Phillips Ford, Inc.
300 S. Main Street
Manheim, Pennsylvania

Gibbles Clete Auto Service
246 S. Main Street
Manheim, Pennsylvania

Quality Body Paint
440 S. Main Street
Manheim, Pennsylvania

Hudson Car Sales
27 Eby Street
Manheim, Pennsylvania

Metal Tech Auto Body
142 S. Wolf Street
Manheim, Pennsylvania

Emergency Response Notification System (ERNS)

ERNS is a national database containing information on reported releases of oil and hazardous substances.

No reported releases were found for the Raymark site.

STATE REGULATORY RECORDS

Storage Tanks

The PADER Division of Storage Tanks database was reviewed for registered storage tanks (aboveground and underground) within a ¼ mile radius of the site.

REGISTERED TANKS		
Location	**No. of Tanks**	**Total Capacity (gallons)**
Universal Friction Composites 123 E. Stiegel Street Manheim, Pennsylvania	13 USTs 1 AST	149,925 550

Sauder Chevrolet 350 S. Main Street Manheim, Pennsylvania	1 UST	275
Sunoco Service Station 315 S. Main Street Manheim, Pennsylvania	3 USTs	18,000
Phillips Ford Sales 300 S. Main Street Manheim, Pennsylvania	2 ASTs	600
Arthur J. Ulrich 10 New Charlotte Street Manheim, Pennsylvania	2 USTs	30,000
JL Honberger Company, Inc. Route 230 and 283 Bypass Manheim, Pennsylvania	-------	------
Pennsylvania Pantry Route 72 Manheim, PA	-------	------
Longneckers Greenhouses 48 N. Oak Street Manheim, PA	-------	------
Jay N. Crouse Exc., Inc. 535 Stiegel Valley Road Manheim, PA	-------	------

Leaking Underground Storage Tanks (LUSTs)

The PADER Division of Storage Tanks database was reviewed for confirmed releases from underground storage tanks within a one mile radius of the site. The following facility is on the LUST database:

West End Lawn
329 W. High Street — No information available
Manheim, Pennsylvania

State Hazardous Waste Sites (SHWS)

State hazardous waste site records are the states equivalent to CERCLIS.

No SHWS sites were found within the search radius.

Solid Waste Facility/Landfill Sites (SWF/LS)

The Raymark site is the only SWF/LS site on the database within the search radius:

Raymark Industries Landfill
123 Stiegel Street
Manheim, Pennsylvania
Facility ID: 30628

Pennsylvania Department of Environmental Resources (PADER) File Search

Site-specific files were reviewed in 1995 at the PADER office located in Harrisburg, Pennsylvania.

Air Permits

PADER Compliance Inspection

PADER inspected Universal Friction Components (UFC) on July 26, 1994 for compliance of air permits. Additional information related to specific processes was requested by PADER. UFC verbally responded to PADER following the receipt of the inspection report and supplied the requested information.

Hazardous Waste

A review of the PADER files indicated that an Administrative Order (AO) was issued by PADER to

Raymark dated April 26, 1990 for unlawful disposal of solid and hazardous wastes in violation of the solid waste laws and regulations. The AO was issued with regard to the landfill owned and operated by Raymark. The AO ordered that Raymark cease continued use of the landfill and submit the following: a closure plan; certification of insurance coverage; a plan for lawful removal of all accumulated baghouse dust present at the landfill; and proof of completion of each previous task. All work at the landfill is expected to be complete by July 2000.

LOCAL RECORDS

Manheim Fire Department

In 1995, Mr. Richard Hauser of Hope Fire Company No. 1 indicated that Raymark did not have any recent reported spills, leaks or releases.

Manheim Sewer/Water Department

Mr. Jim Williams, Borough Manager, indicated that a sanitary sewer line runs through the Raymark property to the northwest of the former landfill. Additionally, Raymark has a site-specific sanitary sewer discharge permit which allows Raymark to discharge processed wastewater into the sanitary sewer, as long as the wastewater meets the discharge criteria set forth in the permit. According to Mr. Williams, Raymark had phenols and copper excursions in the early 1990's, but since then (until 1995) they hd no problems in meeting discharge requirements.

Manheim Building Inspector

Mr. Rob Stoner, Building Inspector, indicated that, as of 1995 there were no outstanding violations at the Raymark facility.

ASBESTOS SURVEY

An asbestos containing material (ACM) survey was performed at the Raymark facility in April 1995. Materials were classified as either surfacing materials, thermal system insulation (TSI) or

miscellaneous materials (roofing material, window caulking, cloth flex connectors, ceiling tiles, ceiling tile glue, transite hoods and labtops, and flooring materials and mastics) in accordance with EPA's Asbestos Hazard Emergency Response Act (AHERA). Materials within each building (building with common foundations and floors were grouped together) were homogenized according to classification.

An updated ACM survey was performed by RT in the year 2000. Some Lower Mill buildings are damaged and have friable ACM in poor condition; these represent imminent hazards. Access should be restricted and demolition to minimize future releases is recommended. ACM in poor condition in occupied areas should be repaired and the balance of occupied facilities placed under an Operations and Maintenance Plan, as required by OSHA regulations.

FINDINGS

This 1995 environmental site evaluation and 1996 inspection identified a number of environmental issues that were either found during the site reconnaissance or as part of the file research. The findings are presented as follows:

Tanks

- The number of tanks (USTs and ASTs) identified during the site walkover did not match the number of tanks registered on file with PADER or those identified by Raymark records and interviewed Raymark personnel. A total of thirteen tanks are listed in the PADER registry; however, twenty-nine were identified during the site walkover.

- The ages of most of the tanks exceed the typical twenty year life expectancy for tanks.

- The 12,000 gallon solvent recovery tank had a reported pipe leak during a 1990 tank tightness test. Raymark undertook additional studies (including a soil gas survey) to evaluate and confirm the release and evaluate potential impacts on soil.

- Based on facility records, an AST ruptured in Building 36 in the late 1980's. The spilled

resin dried and hardened, and is still present, but poses no environmental threat.

Spills/Releases

- Soils are stained west of Building 74. This area is located between the concrete wall and the grassy area adjacent to the oil/water separator. The stains may be related to spills and/or leakage from one or all of the following:
  - The AST (unlabeled red meal tank) present in the same location.
  - The dry well outside the compressor which is pumped either to the red AST (for oils/greases) or the sewer (for liquids).
- The Raymark site personnel interviewed describe several former spills (such as machine lubricants). However, no records or data were available to review.
- Fly ash was deposited on the northern landfill and in an area northwest of the wetland.
- Limited data was available prior to the 1960's related to material handling, storage or releases on the lower facility.
- Minor hydraulic leaks were detected beneath some equipment. Several of these leaks were covered with speedy dry or absorbent pads.
- Floor drains were sealed with concrete in the 1970's. No data was available concerning potential releases from these floor drains prior to the 1970's.

Landfills

- The asphalt cap on the northern landfill has deteriorated in some locations. Cracked surfaces and depressions were present which collected runoff and resulted in ponding.
- Monitoring wells were observed at the northern landfill; however, none were noted in the

southern landfill.

- Friction manufacturing products were observed along the northeasterly slope of the landfill.

- The earthen cover on the southern landfill was vegetated.

- Wooden pallets and debris piles and fly ash were noted on the landfill and in an area northwest of the wetland.

Chiques Creek/Doe Run Creek

- No visual discoloration or turbidity was observed during the time of the site walkover at either Chiques Creek or Doe Run Creek in the vicinity of Raymark's stormwater/non-contact cooling water discharge.

- Lead in sediment and water temperature were issues that concerned PADER in Doe Run Creek. Raymark was required to perform a "Macroinvertebrate Survey." The latest draft report of this survey indicates that off-site potential sources may be contributing to the suppression of biota in the creek. Temperature monitoring was being conducted by Raymark in 1995.

Asbestos

- Asbestos was present at the facility in asbestos containing materials (ACM), as well as in raw product form. Considering the age of the buildings (ranging from the 1910's through 1970's), it can be assumed that asbestos materials were used in construction materials. The raw asbestos product had been used in the past and continues to be used in friction products (as of 1995).

The following additional AOCs or potential AOCs were identified by PADEP or RT Environmental Services after the 1995 Phase 1:

- Spill area - solvents recovery area - Upper Mill
- Non-contact cooling water sumps - Upper Mill

- Old landfill (SF of Lower Mill)
- Waste disposal well - Building 7
- Waste disposal area (Building 70)
- Solvents recovery process areas (Upper Mill and Lower Mill)

All of the above areas of concern were identified and/or investigated as part of a Land Recycling Phase 2 and 3 site investigation program conducted at the facility during the year 2000. **Figure 4** shows the location of all areas of concern. The results of the characterization work will be presented in the balance of this report.